REMARKS

I. Status of Claims

Applicants thank the Examiner for allowing claims 1-10 and 13-16, and submit that the remaining claims 19-23 are also directed to patentable subject matter.

II. Rejection under 35 U.S.C. §103(a)

Claims 19-23 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Biotech. Letters, vol. 16, no. 2, pp. 163-168 (1994) to Janssen et al. ("Janssen").

The Examiner alleges that Janssen discloses a process of lipase-catalyzed synthesis of oleic acid esters of polyethylene glycol (PEG) 400 with the hydrolytic enzyme used not affecting any existing ester bond. The Examiner further alleges that Janssen's starting materials and the starting materials of claims 19-23 are analogous in that they are both PEG polymers. The Examiner continues that Janssen differs from claims 19-23 only by employing a smaller PEG reactant as the starting material.

The Examiner concludes that one of ordinary skill in the art would have been motivated to employ Janssen's process with the expectation of obtaining the desired product because he would have expected the analogous starting materials to react similarly.

Applicants traverse the Examiner's allegations and submit that Janssen provides no suggestion of Applicants' claimed process. Furthermore, Applicants' starting materials are different and not analogous to those of Janssen.

A. Janssen fails to disclose that the hydrolytic enzyme used does not affect any existing ester bond.

Janssen discloses esterification of polyethylene glycol ("PEG") 400 using oleic acid derivatives and Lipozyme™ in hexane to obtain PEG monooleate or PEG dioleate (Summary).

Contrary to the Examiner's statement, Janssen fails to disclose or suggest that the Lipozyme (an immobilized form of *Rhizomucor miehei* lipase enzyme) does not affect any existing ester bond. Specifically, there is no disclosure or suggestion that the Lipozyme is inert to existing ester bonds. In fact, Janssen states on page 163, final paragraph, that "**[l]ipases are known and widely used not only for their capacity to hydrolyze esters in aqueous media** but

also for their ability to form ester bonds in aqueous and non-aqueous solvents" (emphasis added). That is, lipases can be used to both *synthesize* and *cleave* ester bonds.

In view of this disclosure, therefore, Applicants submit that the ordinary practitioner would not have gleaned a suggestion from Janssen that the O-acylated, O-alkylated, or O-alkenylated hydroxy fatty acids or C_1-C_4 alkyl esters recited in claims 19-23 would survive the claimed process for preparing polyoxyalkylene glycol (POAG) esters. Rather, since Janssen discloses that lipases can both form and break ester bonds, there was significant doubt whether the O-acylated, O-alkylated, or O-alkenylated groups in the hydroxy fatty acid would remain intact at the end of the claimed procedure. In this regard, the Examiner's attention is drawn to the fact that Janssen is notably silent regarding stability data for substituent groups on a fatty acid in the presence of a lipase enzyme.

Consequently, contrary to the Examiner's allegation, Janssen fails to disclose or suggest that Janssen's hydrolytic enzyme does not affect any existing ester bond during the preparation of the disclosed compounds.

B. Janssen does not use the same starting materials as Applicants.

1. Fatty acid

As stated above, Janssen discloses esterification of PEG 400 with oleic acid derivatives. On page 164, final paragraph, Janssen states that "[a]cylation was attempted using oleic acid, methyl oleate, triolein, and oleic acid anhydride as acyl donors at 30°C and 42°C". All of these oleic acid derivatives identified by Janssen are derived from unsubstituted fatty acids.

In contrast to Janssen, the starting fatty acids of claims 19-23 are O-acylated, O-alkylated, or O-alkenylated hydroxy fatty acids or C_1-C_4 alkyl esters. A hydroxy fatty acid (or HFA) is an organic fatty acid molecule bearing a hydroxyl (OH) group. Hydroxy fatty acids have an additional reactive site compared to the unsubstituted fatty acids. Those of ordinary skill in the art would recognize that Applicants' hydroxy fatty acid compounds are derivatized at the hydroxyl group, thereby yielding compounds having different properties as compared to Janssen's underivatized oleic compounds.

Applicants submit that Janssen does not provide any suggestion for substituting O-acylated, O-alkylated, or O-alkenylated hydroxy fatty acids or C_1-C_4 alkyl esters (as recited in

claims 19-23) in place of Janssen's oleic acid compounds. In addition, Janssen does not suggest that the disclosed process would be applicable to Applicants' starting materials. Janssen is void of any disclosure or suggestion that the disclosed process is applicable to derivatized hydroxy fatty acids such as the O-acylated, O-alkylated, or O-alkenylated hydroxy fatty acids recited in Applicants' claims.

2. PEG

The Examiner has already acknowledged in the Office Action that Applicants' PEG reactant differs from Janssen's PEG reactant. As discussed on page 8 of Applicants' Amendment dated October 12, 2007, Janssen's PEG has a molecular weight of 400, which is substantially lower than the minimum PEG molecular weight of about 1100 employed in claims 19-23. Thus, in claims 19-23, Applicants employ a PEG molecule which is significantly larger than the PEG 400 used by Janssen.

Applicants' larger PEG molecule can provide steric hindrance to the active site of the enzyme compared to Janssen's PEG 400, and the bulkiness of the PEG molecule employed in claims 19-23 has the potential for reduced reactivity at the enzyme active site. The fact that the larger PEG molecule recited in Applicants' claims does have surprisingly good reactivity despite its significantly larger size as compared to Janssen demonstrates the unexpectedness, and hence nonobviousness, of Applicants' invention.

In view of the significant differences in (1) structure of the fatty acids (O-acylated, O-alkylated, or O-alkenylated hydroxy fatty acids or C_1-C_4 alkyl esters in Applicants' case *vs.* unsubstituted fatty acids for Janssen) as well as (2) size of the PEG reactant (PEG molecular weight greater than 1100 in Applicants' case *vs.* PEG 400 for Janssen), Applicants submit that one of ordinary skill in the art could not have derived the claimed process with any reasonable expectation of success from Janssen.

Consequently, claims 19-23 are clearly not suggested by Janssen and the rejection of the claims under 35 U.S.C. §103(a) is improper and should be withdrawn.

III. Conclusion

Upon entry of this paper, claims 1-10, 13-16, and 19-23 remain pending. Applicants respectfully submit that the pending claims are directed to patentable subject matter. Accordingly, Applicants request expedited allowance of the instant application.

Authorization is hereby given to charge any fee in connection with this communication to Deposit Account No. 23-1703.

Dated: April 9, 2008

Respectfully submitted,

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